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Volume 9 | Issue 2

Article 7

1947

Canine Oophorohysterectomy

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(1947) "Canine Oophorohysterectomy," *Iowa State University Veterinarian*: Vol. 9 : Iss. 2 , Article 7.

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CLINICAL MEDICINE

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Canine Oophorohysterectomy. It is not the purpose of this report to describe this case as an individual one because as such, it has little clinical significance. An effort will be made in this paper to describe the procedures and techniques used at the Stange Memorial Clinic in performing the canine oophorohysterectomy.

The patient used for the pictures was a 4-year-old mixed shepherd bitch. On February 5, 1947, this dog entered the hospital for the routine operation. The patient was examined and found to be in good health with a normal temperature, pulse rate and respiration rate. However, the one hinderance was obesity.

Preparation of dog: Feed is withheld for a period of 24 hours preceding the operation. However, free access to water during this period is essential. One-half hour prior to surgery the animal is injected with morphine sulfate and atropine sulfate subcutaneously in the flank region. The dosage of the morphine atropine solution given varies with the size of the animal and the degree of narcosis desired. In the smaller breed dogs, such as Cocker Spaniels, $\frac{1}{2}$ gr. of morphine sulfate and 1/100 gr. of atropine sulfate is usually quite sufficient. However, in larger dogs, such as the patient in this case, 1 gr. of morphine sulfate and 1/50 gr. of atropine sulfate is usually indicated. The atropine sulfate is included in the solution to lessen the vomition reflex caused by the morphine sulfate and to inhibit salivation by its anti-sympathetic action.



Fig. 1. Patient showing effects of preanesthetic.

When the proper depth of narcosis is obtained the patient is restrained on the operating table in a ventral-dorsal position. A large area surrounding the operative site is then shaved and cleaned with ether until no dirt or body fat remains. If the urinary bladder is distended with urine it is emptied by exerting pressure on the fundus of the bladder through the abdominal wall. Any urine that is expressed is allowed to flow in a vessel that is held near the dorsal border of the vulva. The prepared area is then disinfected with several sprayings of 70 per cent ethyl alcohol (by weight). A suitable ophthalmic ointment is then applied to the eyes and petrolatum is applied to the nostrils.

This is done to protect the mucous membranes against the irritating ether vapors.

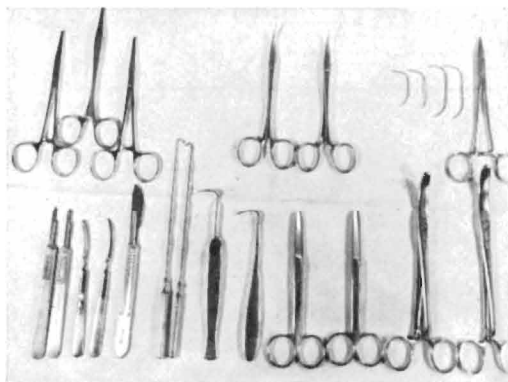


Fig. 2. Arrangement of Instruments.

The instruments: During the time the patient is being prepared, the instruments, shroud, rubber gloves and surgical sponges are placed in an autoclave to be sterilized for 20 minutes at a temperature of 250° F. with 15 pounds of pressure. The instruments are placed into the tray for sterilization in the order that they are to be used; if this practice is followed no unnecessary searching is required during the operation. At least 2 instruments for each step are prepared, thus if one be-



Fig. 3. Operating site prepared for surgery.

comes contaminated the surgeon has another sterile instrument on hand.

Preparation of the surgeon: The first step in the surgeon's preparation is to dress in a freshly laundered white operating frock. Scrubbing of the hands and arms with a sterile hand brush, soap and clean water should be carried on for a minimum of 20 minutes. The hands, then arms are dried on cotton towels that have been sterilized with the instruments. Sterile surgical rubber gloves are then placed on the hands using care not to contaminate the outside of the gloves by touching them with any part of the bare skin. After the gloves are on the hands, the surgeon touches nothing that has not been steriliz-

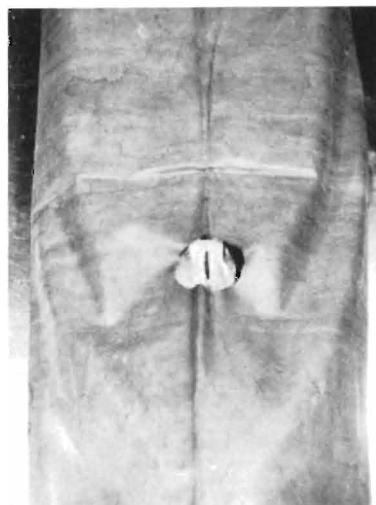


Fig. 4. Shroud in place, showing initial incision.

ed, because any break in the chain destroys the value of the aseptic technique.

The operation: The anesthetist begins at this time to administer ether to the patient by means of the open method using a well fitting ether cone. This is started while the animal is lying horizontal thus, if any urine is excreted as the sphincter of the bladder relaxes, it can be easily cleaned from the table and does not contaminate the prepared operative area. As soon as the animal is completely relaxed the table is tilted 80° and the height adjusted according to the convenience of the surgeon. The depth of anesthesia is

determined and maintained by constant observation of the patient's respiration, heart beat and the color of the oral mucous membranes. The contraction and relaxation of the iris cannot be used because the atropine sulfate given in the preanesthetic results in dilatation of the pupils.

The sterile rubber sheet shroud is, when sufficiently cooled, placed over the animal by the surgeon. A small opening in the center of the shroud is adjusted to the point where the incision is to be made. The initial incision is made just posterior to the umbilicus and extends posterior to the desired length. Due to the obesity



Fig. 5. Covault hook and wound retractor in use.

of this particular patient it was necessary to make the abdominal incision 25 mm. in length. The scalpel found to be most satisfactory in making this incision is a Bard-Parker with a number 15 blade. It is the intention of the surgeon to incise the skin, muscle and peritoneum simultaneously, but often the peritoneum falls away from the body wall and is not included in this initial incision. In the event that the peritoneum does fall away, it is grasped with a small pair of curved forceps and withdrawn through the incision, knicked with a scalpel and then allowed to return to the cavity. The peritoneal incision is

enlarged by the use of a small, curved, blunt-pointed bistoury.

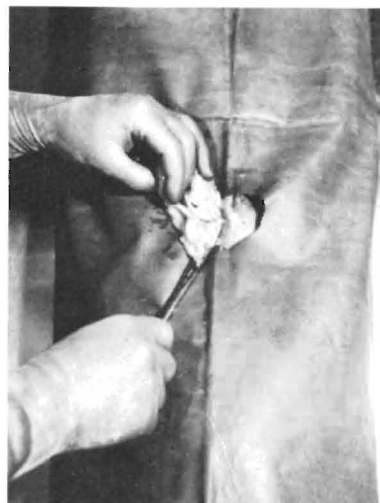


Fig. 6. Withdrawal of the uterus.

In securing the ovary a Covault hook and wound retractor are the instruments employed. The Covault hook is a long slender rod with a blunt hook on one end. The wound retractor is placed in the left hand and employed to spread the opening of the wound. With the hook in the right hand it is placed through the in-



Fig. 7. Exposed uterus and horns.

cision and the shank is pressed laterally to further spread the abdominal opening.

With the incision so opened usually the left horn of the uterus can be seen lying on the dorsal part of the abdominal wall just left of the rectum and dorsal to the bladder. Using the Covault hook the broad ligament of the horn is hooked and withdrawn from the abdominal cavity. The wound retractor is inserted through the broad ligament below the exposed



Fig. 8. Abdominal incision closed with 2 interrupted silk sutures.

portion of the horn and the hook is returned to the instrument tray. Taking the wound retractor in the right hand the left index finger is placed around the uterus and through the broad ligament. If, at this time, the ovary is not exposed a small pair of forceps is used to gently withdraw the remaining portion of the uterus and the ovary through the incision.

Often in cases of old fat dogs it is very difficult to see the uterus in the abdominal cavity. The broad ligament may contain such a large amount of fat that it completely occludes the uterus from view. However, a broad ligament in this condition is easily recognized with experience. The ovary in an obese bitch is also difficult to locate, in this event the surgeon must palpate the mass of adipose tissue until he is certain that the ovary is exposed. The surgeon then places an

angiotribe just dorsal to the ovary. This instrument is placed in this position to crush the ovarian vessels that pass to the ovary.

The ovary is then cut away from the angiotribe on the side opposite to the arterial source. A Bard-Parker scalpel with a number 22 blade is used. The ovarian vessels are then ligated using number 4 plain catgut and the angiotribe is released. The horn of the uterus is then further withdrawn by pulling gently with small forceps. An angiotribe is then placed posterior to the bifurcation of the horns of the uterus and just anterior to the cervix. That portion of the uterus posterior to the angiotribe is then ligated with number 4 plain catgut. The uterus is cut anterior to the angiotribe and the forceps released allowing the uterine stump to return to position in the abdominal cavity.

The right horn is then gently withdrawn until the right ovary is exposed. The right ovarian artery is then clamped with an angiotribe and ligated in the same manner as was the left one. The uterus is then completely removed as the remaining attachment of the broad ligament to the right ovary is cut. The angiotribe is then released and returned to the instrument tray. The surgical wound in this case was closed by using 2 interrupted silk sutures which include the skin, muscle and peritoneum. The wound retractor is useful in holding the edges of the wound to make certain that the peritoneum is included in the sutures. The number of sutures varies with the size of the incision. When the incision is 12 mm. or less only one interrupted suture is needed, but 2 are usually employed to approximate the edges of larger openings. The suture material is applied while the patient is in a vertical position, but the animal is returned to a horizontal position and the hind legs are released before the knots are tied. These sutures should be tied loose enough to allow for the inflammatory swelling that will follow. If it is desired, the skin may be sutured with a continuous suture using number 2 plain catgut. Loopuyt's numbers 4 and 2 needles are used in all suturing and ligating procedures because of their easy manipulation.

After the sutures have been tied and the area cleaned with sterile surgical sponges, a number of these sponges are placed over the incision and a roller bandage is applied. The roller bandage consists of binding the abdomen, over the incision, with 3 inch gauze, wrapping completely around the animal's body several times and tying the ends securely. This type of bandage has an advantage in that it tends to control hemorrhage if any is present.



Fig. 9. Duo-adhesive bandage in place.

Another method that may be used in covering the wound is to employ a "Duo-Adhesive" type bandage. With this method, no pressure is applied to the abdominal portion of the animal's body. A sterile linton gauze pad of appropriate size is placed over the wound area and held in place with a liquid latex preparation. The advantage of this particular type of bandage is that it does not have to be removed until the silk sutures are removed. This is the type of bandage that was employed in this particular case.

The after care of the patient is relatively simple. The patient should be kept in a warm, dry kennel and, upon complete recovery from the anesthesia, free access to water should be provided. A light, nutrient diet is recommended for

the first few days after which time the regular kennel diet may be instituted.

If a roller bandage has been applied it should be removed 24 hours following the operation, for if this bandage is allowed to remain on for a longer period of time, pressure necrosis in the flank region occurs. The dog's temperature, pulse and respiratory rates are taken daily during the hospitalization period. The silk sutures are removed in 72 hours and the incision site is sprayed with 70 per cent ethyl alcohol (by weight). If the recovery is uneventful the patient is usually discharged upon the sixth day after entering the clinic.

(The author is indebted to Dr. Dwight A. Smith for his cooperation and many helpful suggestions.)

R. T. Howard, '47

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Non-Productive Alveolar Periostitis. A grey 3-year-old horse entered Stange Memorial clinic Oct. 20, 1946. Upon examination, the only symptom observed was a severe unilateral nasal discharge. There was no swelling of the facial bones.

With the aid of a mouth speculum, an oral examination revealed no palpable abnormality of any of the upper cheek teeth. The following abnormalities were sought during the examination: (1) A loose tooth, (2) a tooth out of line, (3) recession of gums from a tooth, (4) softening of the gum around a tooth, (5) a split tooth.

Many times, such as in this case, it is difficult to decide which tooth to repel, as in some instances the only symptom present is a unilateral nasal discharge with nothing to explain it. When this condition is diagnosed at this clinic the fourth upper cheek tooth is repelled routinely. It has been convincing to see that approximately 90 per cent of these cases then recover. However, if there is an enlargement on the face, the trephine opening is made directly over the center of the swelling.

In this animal the fourth upper cheek tooth was removed using the routine